SEMESTER EXAMINATION DECEMBER-2023

Course Name: - B.Tech **Semester:- V**

Paper Name: - Artificial Intelligence **Paper Code:- TCS 501**

Time - 3 Hrs + 20 minutes per hour extra time for V.I. & examinees with writer. **Max Marks-70**

समय– 3 घण्टे + 20 मिनट प्रति घंटे अतिरिक्त–दृष्टिबाधित एवं सह लेखक परीक्षार्थियों के लिए। अधिकतम अंक–70

Instructions:

- The question paper consists of three sections namely A, B, C. All sections are compulsory.
- Section A- Each question carries **3 mark. All questions are compulsory.**
- Section B- Answer any **5 out of 7** given questions in maximum one hundred fifty (150) words. Each question carries **7 marks.**
- Section C- Answer any **2 out of 3** given questions in maximum three hundred (300) words. Each question carries **10 marks.**

निर्देश:

- प्रश्न पत्र में तीन खण्ड अ, ब, व स हैं। सभी खण्ड अनिवार्य हैं।
- खण्ड–अ में प्रत्येक प्रश्न **तीन अंक** का है। **सभी प्रश्न अनिवार्य हैं।**
- खण्ड–ब में **सात प्रश्नों में से किन्हीं पाँच** प्रश्नों के उत्तर अधिकतम 150 शब्दों में दें। प्रत्येक प्रश्न **सात अंक** का है।
- खण्ड–स में **तीन प्रश्नों में से किन्हीं दो** प्रश्नों के उत्तर अधिकतम (250-300) शब्दों में दें। प्रत्येक प्रश्न **10 अंक** का है।

Section – A (खण्ड–अ)

Objective Questions (वस्तुनिष्ठ प्रश्न)

1. Answer all the following questions. **5x3 =15**

निम्नलिखित सभी प्रश्न अनिवार्य हैं।

i) What is used in determining the nature of the learning problem?

a)Environment

b)Feedback

c)Problem

d) All of the mentioned

ii) Which of the following is a component of Artificial Intelligence?

a) Learning

b) Training

c) Designing

d) Puzzling

iii) In artificial Intelligence, knowledge can be represented as_____.

a) Predicate Logic

b) Propositional Logic

c) Compound Logic

d) Machine Logic

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iv) What are the composition for agents in artificial intelligence?

a)Program

b)Architecture

c)BothProgram&Architecture

d) None of the mentioned

v) Which agent deals with happy and unhappy states

a)SimpleReflexAgent

b)ModelBasedAgent

c)LearningAgent

d) Utility based agent

Section – B (खण्ड–ब)

Short Answer Questions (लघुउत्तरीय प्रश्न)

2. Answer any five of the following questions in maximum 150 words. **5x7=35**
निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर अधिकतम 150 शब्दों में दें।

i. Define Artificial Intelligent? List down the characteristics of intelligent system.

ii. What do you understand by problem formulation? Explain PEAS representation with Automated car drive example.

iii. What is Searching? Differentiate between uninformed and informed search.

iv. What is Breadth first search? Explain the BFS strategy with algorithm.

v. How problem can be defined as state space search? Explain 8 puzzle problem.

vi. Discuss Simple reflex agent with its architecture. Differentiate between strong AI and weak AI.

vii. Explain Reinforcement Learning. What are the needs of Reinforcement Learning?

Section – C (खण्ड–स)

Descriptive Questions (विवरणात्मक प्रश्न)

3. Answer any two of the following question in maximum 300 words. **2x10=20**
निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर अधिकतम 300 शब्दों में दें।

i) Explain Bayes Theorem and briefly discuss about Bayesian Belief Network.

ii) Explain the evolution of Artificial Intelligent in detail.

iii) Write short note on:
(a) Learning Agent
(b) Modus Ponens
(c) Disjunctive Syllogism

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